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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,540	01/16/2004	Anna Kron		5593

7590 03/15/2006  
DAVID J. SERBIN  
1217 KING STREET  
ALEXANDRIA, VA 22314

EXAMINER

ZEMEL, IRINA SOPJIA

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/758,540

Applicant(s)

KRON ET AL.

Examiner

Irina S. Zemel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The rejections not addressed below are deemed withdrawn.

#### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4,287,308 to Nakayama et al., (hereinafter "Nakayama") in combination with US Patent 4,255,307 to Miller, (hereinafter "Miller").

The rejection of claims 1-17 and 20 stand as per reasons of record.

As far as the amended claims 18 and 19, the claimed subject matter of those claims is also considered to have been unpatentable over the disclosure of the above cited references. The claims require the presence of a compound defined by the recited formula in the microspheres with shells obtained from polymerizing of vinyl unsaturated monomers. Such shells, as disclosed by Nakayama in column 2, lines 30-45, are conventionally obtained by emulsion polymerization of vinyl monomers, such as acrylic or methacrylic monomers, in water media in the presence of a suitable emulsifying agent. The claimed compounds are known emulsifiers for the polymerization as evident, for example, from Miller, column 3, lines 5-25, and the residual amounts of emulsifiers would have been inherently present in the product. Note that the specification disclosing embodiments claimed in claims 18-19 on pages 7-8 of the specification does not provide any guidance as to either the amounts of the claimed

compounds in the microspheres or their function (or intended function) in the claimed product.

***Claim Rejections - 35 USC § 102/103***

Claim 20 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakayama.

The rejection stands as per reasons of record.

***Response to Arguments***

Applicant's arguments filed 12-27-2005 have been fully considered but they are not persuasive. The applicants main argument is that the chemical agents disclosed by Nakayama for reducing the amount of residual monomers and those disclosed by Miller are not functionally equivalent since there is no teaching in Miller that the expandable microspheres can be treated without discoloration or without adversely effecting their ability to expand. The applicants refer to the illustrative example 1, where, as alleged by the applicants the unexpected results and non-equivalency of the claimed agents and agents disclosed in Nakayama are shown. While the examiner agrees that the most preferred agent disclosed in Nakayama, i.e., sodium sulfate, gives discoloration upon reacting with residual monomer contained in microspheres, those results are quite expected and well known in the art. It is notoriously known in the art that sulfides have bad smell and that, for example, sodium sulfide is of a dark yellow/red color as compared to sodium sulfite, which is white. (See for example, Hawley's Condensed Chemical Dictionary) It would have been clearly expected that the reaction product will

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bear the same color as the reactant (especially when the coloured reactant is added in excess) and the dark red color of the microsphere treated with sodium sulfide would have been expected ( same as the bad odor associated with the sulfide reactant). The color of the starting reactants (which is well known in the art) is motivation by itself to substitute one with another, equally suitable for a given reaction, to obtain a final product of the same color without additional purification steps.

As far as reduction in expansion capability, first of all, as discussed above, sodium sulfide, the compound that is considered (even by the applicants) one of the preferred embodiments of Nakayama, and is most closely related to the claimed compounds, does not produce expandability reduction effect. The ones that do show such effect are not considered to be the closes prior art compounds as not being even disclosed in Nakayama. Further, the expandability reduction effect is not characterized in such a way that it can be even considered as probative unexpected results. The only statement given in the referenced illustrative example is "lees expansion" without giving any quantitative characteristics corresponding to the "reduction" of expandability, and, therefore, can not be considered sufficient to rebut the prima facie obviousness rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

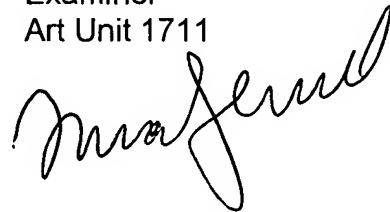
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Irina S. Zemel  
Examiner  
Art Unit 1711

A handwritten signature in black ink, appearing to read 'Irina S. Zemel', written in a cursive style.

ISZ